BER

R=1/6 Turbo codes

R=1/3 Turbo codes

R=1/3 with 2 packets combining

R=1/6 with code combining

3dB Packet combining gain (averaging in AWGN)

3dB Gain
Es is incresed by a factor of 2

Eb/No(dB)

Gain for code combining using R=1/6
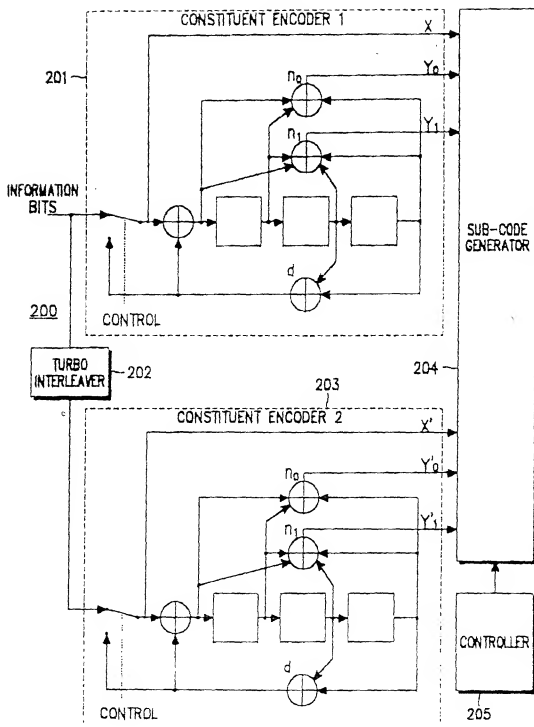
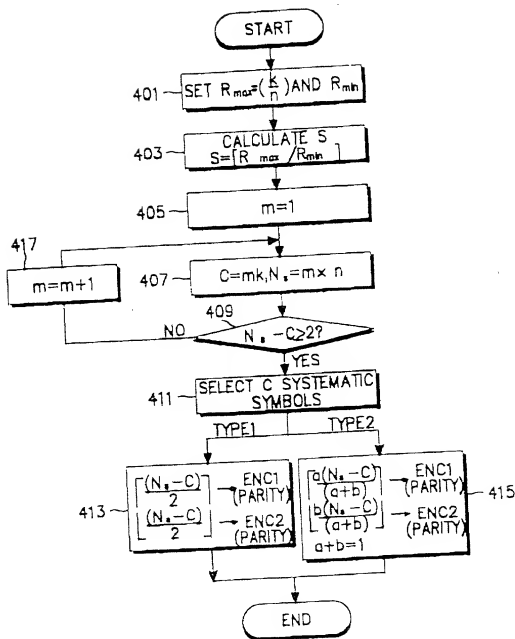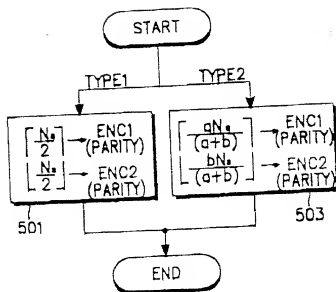Es of R-1/3 = Es of R-1/6   Es of R-1/3 = 2X Es of R-1/6
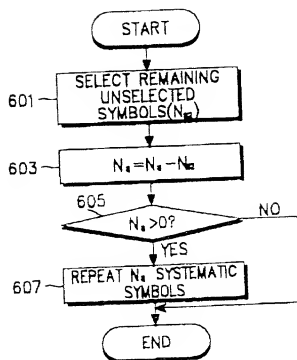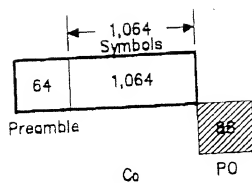HARQ Type II/III   Non HARQ

FIG. 1

FIG. 2

FIG. 3

FIG. 4

```
           ┌─────────────┐
           (    START    )
           └──────┬──────┘
                  │
        ┌─────────▼─────────┐
        │ SELECT REMAINING  │
601 ──  │    UNSELECTED     │
        │   SYMBOLS(Nᵣ)     │
        └─────────┬─────────┘
                  │
603 ──  ┌─────────▼─────────┐
        │    Nₐ=Nₐ−Nᵣ       │
        └─────────┬─────────┘
            605   │
            ◇─────▼─────◇  NO
           < Nₐ>0?       >──────┐
            ◇─────┬─────◇       │
                  │YES          │
607 ──  ┌─────────▼─────────┐   │
        │REPEAT Nₐ SYSTEMATIC│  │
        │     SYMBOLS        │  │
        └─────────┬─────────┘   │
                  │◄────────────┘
           ┌──────▼──────┐
           (     END     )
           └─────────────┘
```
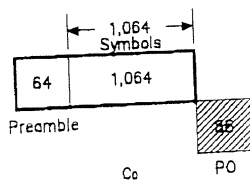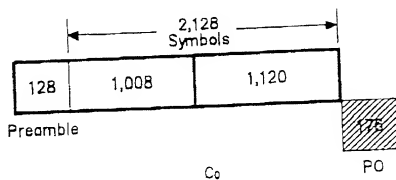
FIG. 5

FIG. 6

FIG. 7

FIG. 8

FIG. 9

FIG. 10

FIG. 11

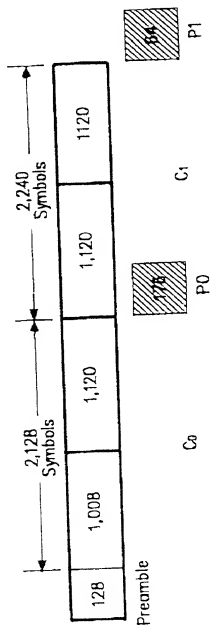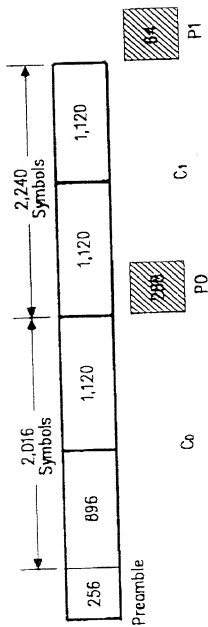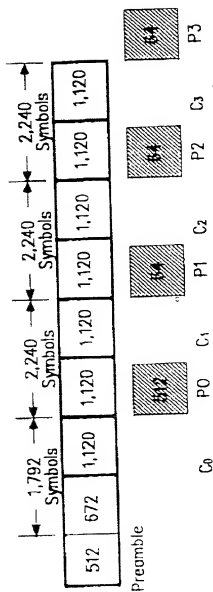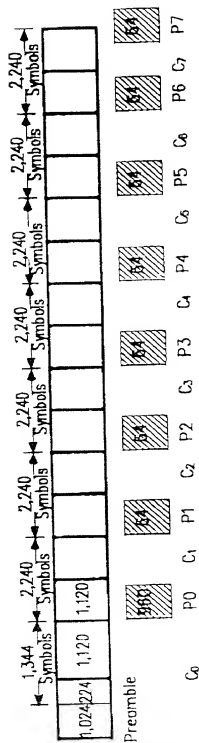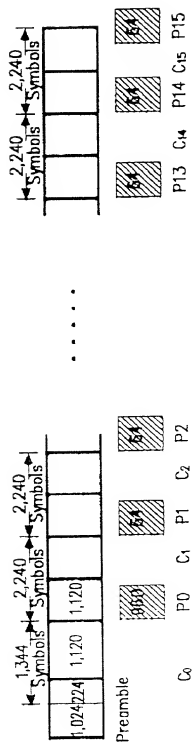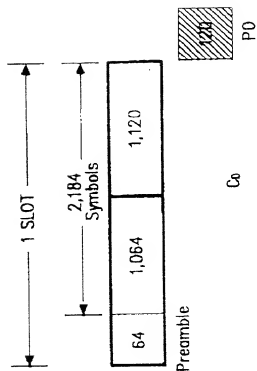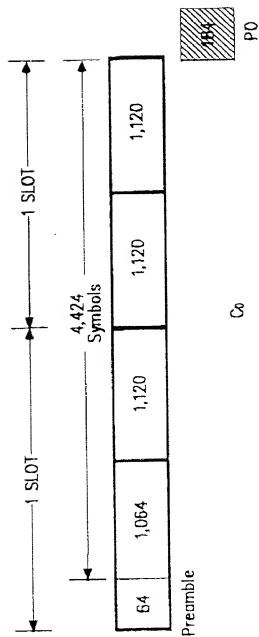| 512 | 672 | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 |

Preamble

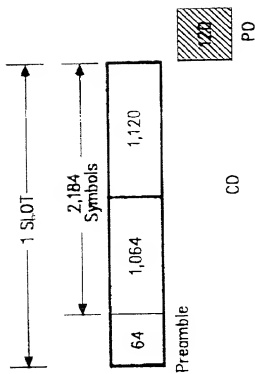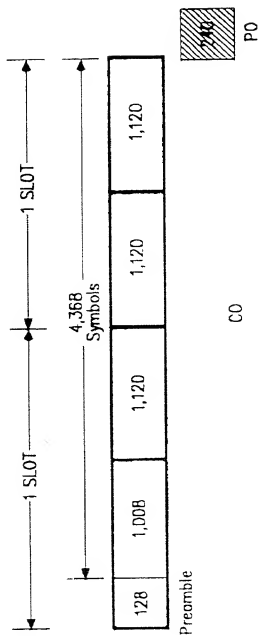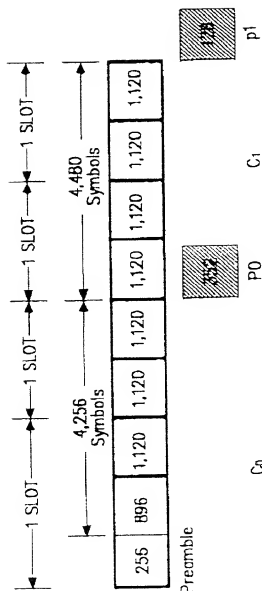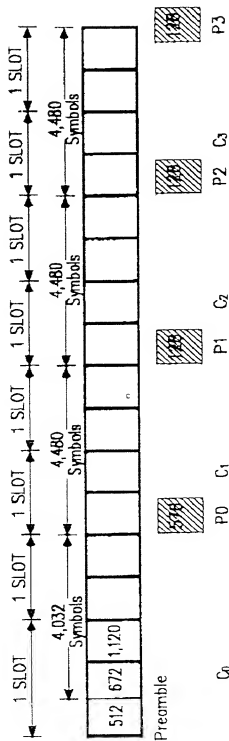C_0 P0 C_1 P1 C_2 P2 C_3 P3

FIG. 12

FIG. 13

FIG. 14

FIG. 15

FIG. 16

FIG. 17

FIG. 18

FIG. 19

FIG. 20

FIG. 21

FIG. 22

FIG. 23

FIG. 24

FIG. 25